Proposal to the Trinity Adaptive Management Working Group (TAMWG)

Request that the TAMWG recommend that the Trinity River Restoration Program fund BLM to purchase the Weigel parcel at Gold Bar (river mile 106.4) as a long-term coarse sediment source for the Trinity River Restoration Program.

Proposed by:

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BACKGROUND

Since completion of Trinity and Lewiston Dams in 1964, coarse sediment historically delivered by the upstream watershed has been trapped by the dams, eliminating coarse sediment supply immediately downstream of Lewiston Dam. The high flow regime responsible for transporting coarse sediment has also been greatly reduced, but the periodic Safety of Dams releases since 1964 have been sufficiently large enough and of long enough duration to cause a coarse sediment deficit downstream of Lewiston Dam. The combined effect of lost coarse sediment supply and the reduced flows has: 1) degraded salmonid spawning and rearing habitat; 2) reduced the magnitude, duration, and frequency of physical processes in the river, and 3) transformed the river morphology from a complex alluvial channel to a simplified, riparian encroached channel.

The Trinity River Flow Evaluation Study and the Trinity River Restoration Program Record of Decision (ROD) has acknowledged these impacts, and has directed the restoration program to restore the river by a combination of flow management, sediment management, and channel rehabilitation. The Flow Evaluation Study recommended a coarse sediment management strategy that: 1) released high flows of sufficient magnitude and duration to transport tributary-derived coarse sediments at the long-term rate of input (e.g., Rush Creek), 2) a short-term coarse sediment augmentation program to restore coarse sediment storage in the Trinity River, and 3) a long-term coarse sediment augmentation program to maintain the restored coarse sediment storage by adding at a rate equal to transport by the high flow releases. The primary coarse sediment introduction locations would be between Lewiston Dam and Indian Creek, with sites closer to Lewiston Dam being prioritized. The purpose of the coarse sediment management program is to complement the channel rehabilitation efforts to transform the simplified rectangular channel back to a dynamic, complex, alluvial channel. This transformation is not solely to increase or improve salmonid spawning habitat, but fry rearing habitat, juvenile rearing habitat, as well as habitat for other species and life stages.

The coarse sediment management recommendations in the Flow Evaluation Study identified a small number of priority introduction sites, and suggested that the long-term coarse sediment supply be developed from a local source. The general recommendations contained in the Flow Evaluation Study were expanded to more detail in February 2003 with the preparation of the Administrative Draft Coarse Sediment Management Plan. This Administrative Draft Coarse Sediment Management Plan identified:

1. Potential short-term coarse sediment introduction sites between Lewiston Dam and Grass Valley Creek, including method of introduction and estimates of volume added at each site;
2. Potential long-term coarse sediment introduction sites between Lewiston Dam and Grass Valley Creek, including method of introduction at each site;
3. Potential coarse sediment source locations, with associated land ownership and volumes;
4. Estimates of particle size for dredge tailing sites;
5. Monitoring protocols for short-term and long-term introduction sites.

The Technical Modeling and Analysis Group (TMAG) of the Trinity River Restoration Program is in the process of revising the Administrative Draft Coarse Sediment Management Plan.

Since the mid-1970's, coarse sediment has been periodically introduced to the reaches immediately downstream of Lewiston Dam by the Bureau of Reclamation, Department of Water Resources, and the US Forest Service. Historic introduction has used local sources, such as Rush Creek delta material and coarse sediment removed from the Diversion Dam just upstream of the New Lewiston Bridge. More recently, coarse sediment introduction efforts have used gravels imported from the Sacramento

Valley. These gravels are not native to the Trinity River basin, are moderately angular, and are costly to import from the Sacramento Valley. The Flow Evaluation Study and the Administrative Draft Coarse Sediment Management Plan recommend that local sources of coarse sediment be developed for future long-term management to reduce costs and restore areas damaged by historic dredge mining. Of the 62 potential coarse sediment source sites identified by the Administrative Draft Coarse Sediment Management Plan, the sites closest to Lewiston Dam were prioritized due to shorter haul distance, avoidance of trucking through urban areas (Weaverville), and ability of source site restoration to provide benefits to salmonid rearing habitat (large floodplain restoration sites in proximity to spawning areas).

PROPOSAL

This proposal requests that the Trinity River Adaptive Management Work Group (TAMWG) make a recommendation to the Trinity Management Council that the Trinity River Restoration Program purchase the Weigel parcel at Gold Bar (RM 106) for use as a long-term coarse sediment source for future coarse sediment management (Figure 1).

The parcel is currently owned by a private landowner. Trinity County has placed a tax lien on the property due to delinquent property tax payments and would like to split and sell a portion of the property to settle the tax debt. In 2002, discussion began between Trinity County, Bureau of Land Management, Trinity River Restoration Program staff, and Mr. McBain to acquire the property for future restoration purposes and to settle the tax debt. Since the County needed to settle the tax debt quickly, and the Trinity River Restoration Program was unable to act fast enough at the time as it was just being formed, Mr. McBain agreed to purchase the parcel to bridge the gap and secure the property as a key part of the long-term restoration solution for the Trinity River. This proposal contains the following components:

- The Bureau of Land Management would acquire the lands and mineral rights from Mr. McBain at a price to cover his original purchase price and expenses;
- Property would be placed in a conservation easement, with rights to remove coarse sediment being retained by the BLM;
- A long-term right of way easement has been granted on the east-bank parcel to allow coarse sediment to be hauled across the river to Goose Ranch Road (if needed);
- Coarse sediment would be removed down to a level of floodplain that would be frequently inundated by the ROD flow regime. The specific method and duration of coarse sediment removal would be determined by the Restoration Program and BLM;
- Restored floodplain would be revegetated with native woody riparian vegetation, generating 10-15 acres of riparian forest along the river that was historically desolate dredge tailings, greatly improving terrestrial habitat value in this reach of river (Figure 2 and Figure 3).

This project functionally restores two sites for the price of one: a large portion of the 19-acre parcel is restored as functional floodplain and riparian forest, and the removed gravel-cobble is inserted into the Trinity River at various locations downstream of Lewiston Dam as part of the long-term coarse sediment management for the Restoration Program. Additionally, two potential bank rehabilitation sites exist on the property, so acquisition would also ease implementation of these projects.

The property is located on the west bank of the river, is approximately 19 total acres, 7.5 acres of which contain dredge tailings (Figure 2). The Administrative Draft Coarse Sediment Management Plan estimated 220,000 yd^3 of usable coarse sediment at the entire portion of Gold Bar (including tailings on adjacent properties) using lower resolution 1997 topography. By using the new topography

developed from the 2001 aerial photographs and photogrammetry, and by assuming a constructed floodplain inundated by 6,000 cfs (Figure 2), removal of the dredge tailings above this floodplain level would result in generating approximately 180,000 yd^3 of coarse sediment for the Weigel parcel. Because the 180,000 yd^3 estimate only incorporates the dredge tailings and ignores coarse sediment sources on the pre-dam bar surface, the volume estimate should be considered conservatively low. Particle size analysis of dredge tailings downstream showed that 75% of the coarse sediment was between 0.3-inches (8 mm) and 6-inches (152 mm) diameter (desired coarse sediment introduction size range). Therefore, there is approximately 135,000 yd^3 of usable coarse sediment available from the Weigel parcel.

The purchase cost of the parcel by Mr. McBain is $35,000. Anticipated closing costs, fees, interest, and surveying costs are $4,000, for a total estimated project cost of $39,000. Mr. McBain does not seek a profit on this land exchange; rather, his intent is to secure the site and coarse sediment resources for the long-term use of the Trinity River Restoration Program. This proposal requests that BLM purchase the property from Mr. McBain for a cost not to exceed $39,000. In addition to this purchase cost, the Restoration Program will eventually need to expend the following funds to fully implement the restoration project:

ITEM	ESTIMATED COST
1) Purchase Weigel Property (subject of this proposal)	***$39,000***
2) Temporary bridge (railroad car bridge should suffice, cost includes purchase, design, construction)	$100,000
3) Restoration design for site, that would also function as a Reclamation Plan for SMARA compliance	$50,000
4) Environmental permitting and documentation	$100,000
5) Coarse sediment sorting, transportation, insertion contract (assume cost=$6.00/$yd^3$)	$813,000
TOTAL ESTIMATED IMPLEMENTATION COST	$1,102,000

This cost for Item #4 has some uncertainty because the actual cost depends on the approach taken to make use of the tailings. This cost could potentially be reduced significantly if the fine sediment and boulder "waste material" is removed by the contractor. The cost could also vary depending on whether the coarse sediment is processed on-site or off-site. The process of removing dredge tailings at one site (and restoring the dredge tailing site as a functional floodplain) and using excavated gravels and cobbles for restoration at another site has been successfully applied at Clear Creek and other Central Valley rivers. A brochure summarizing one phase of the Clear Creek project is included. Lastly, there may be some concerns about potential sources of mercury in the tailings. Because the fines would be removed from introduced coarse sediment, potential problems from mercury in the tailings would be avoided.

Assuming a total project implementation cost of $1,102,000 and a usable gravel-cobble volume of 135,000 yd^3, the resulting long-term cost to the program would be $8.13/$yd^3$. The average purchase price for gravel introduction over the past three years has been $24.03/$yd^3$. If the Restoration Program were to purchase the 135,000 yd^3 as was done in recent years, the total project cost would be $3,400,000. Implementation of this project would reduce the cost to $1,102,000, resulting in a long-term cost savings of $2,300,000 (a 68% savings) for the 135,000 yd^3 of usable coarse sediment available on-site. A local contractor would likely be used to process and introduce the coarse

sediment to the river, or to process the coarse sediment and stockpile it at a designated location for future use. These details would need to be developed by the Restoration Program. Obtaining this long-term coarse sediment source site would save the Restoration Program a considerable amount of funds, and would also be a model project to illustrate the long-term fiscal resourcefulness of the Restoration Program.

Using the coarse sediment introduction estimates from the Trinity River Flow Evaluation Study, the weighted average annual coarse sediment introduction need ranges from 6,900 yd^3/yr to 13,600 yd^3/yr (more precise estimates are being estimated with the USBR sediment routing model). Based on these average annual introduction estimates, the Weigel parcel would supply 10 to 20 years of the coarse sediment supply for the Restoration Program. The entire portion of Gold Bar could be eventually obtained and restored (if landowners are willing), in addition to the 19 acres proposed here, thereby increasing the number of years that Gold Bar could function as a coarse sediment introduction source. A 12-acre parcel immediately downstream is currently for sale, which has a small volume of dredge tailings but contains ¼ mile length of the Trinity River. Other property owners may be interested in removing the remaining dredge tailings on Gold Bar downstream of the Weigel parcel, enabling more complete rehabilitation and revegetation of the site.

Other sources of coarse sediment are potentially available, such as small volumes of tailings on BLM property near the Old Lewiston Bridge, the Rush and Indian Creek deltas, and downstream dredge tailings. The BLM tailings are a high priority, but their small volume (49,000 yd^3) makes it a lower priority than the Weigel parcel. The deltas may provide a small amount of coarse sediment for upstream introduction sites, but the intent of the Record of Decision is for instream flow releases to route these delta sediments to downstream reaches. Downstream dredge tailings contain larger volumes of coarse sediment, but the largest tailings would require hauling over Oregon Mountain and through Weaverville. Using these larger tailings sources would significantly increase transportation costs, and may cause impacts to public safety, air quality, and roads.

TIMELINE

This proposal requests that the TAMWG recommend that the Restoration Program apply $39,000 of remaining unobligated 2003 funds (if they exist) to the Bureau of Land Management for purchase of the Gold Bar property. If there are no unobligated 2003 funds available for use for this project, this proposal requests that funding for the project be provided in the 2004 budget process. If unobligated 2003 funds are available, the property could be transferred to the BLM in 6 to 12 months. Regardless if 2003 or 2004 funds are used to purchase the property, if the property is purchased by the BLM, funds should be set aside in the FY 2004 budget to begin the planning/design/permitting process for the project. Restoration of the site and corresponding use of the coarse sediment for input into the river could begin as early as 2005.

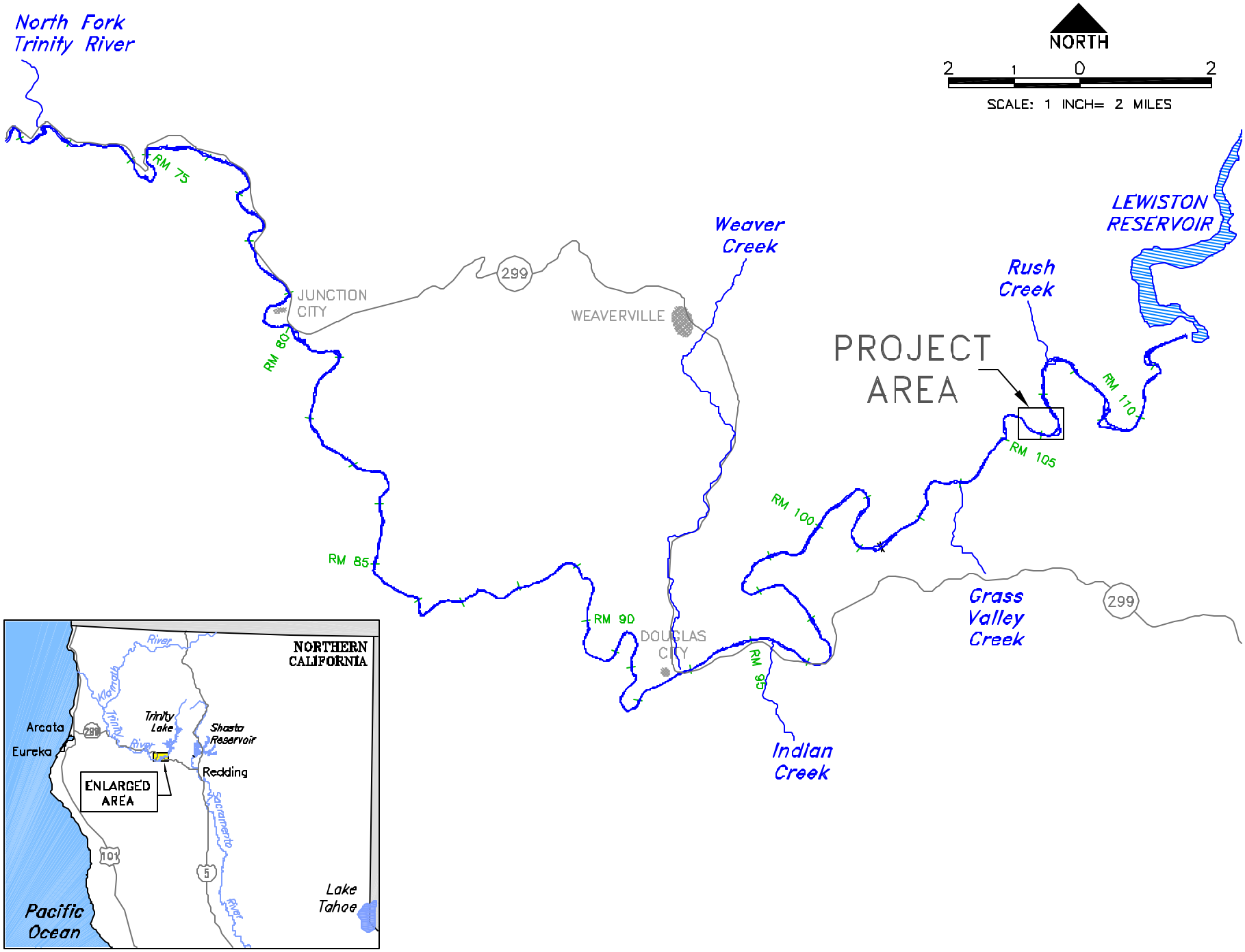

Figure 1. Gold Bar project location

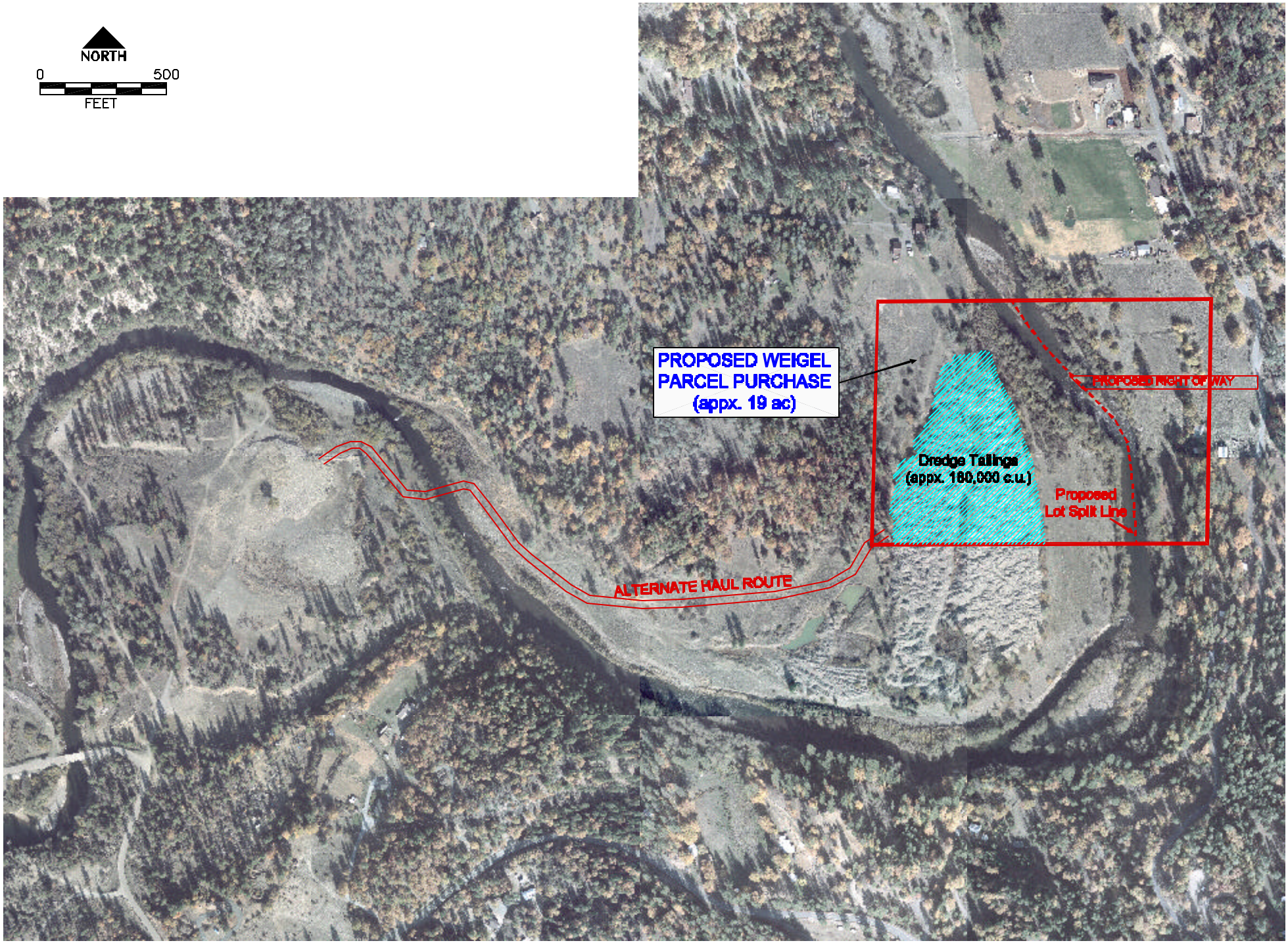

Figure 2. Gold Bar dredge tailings and proposed Weigel parcel restoration are

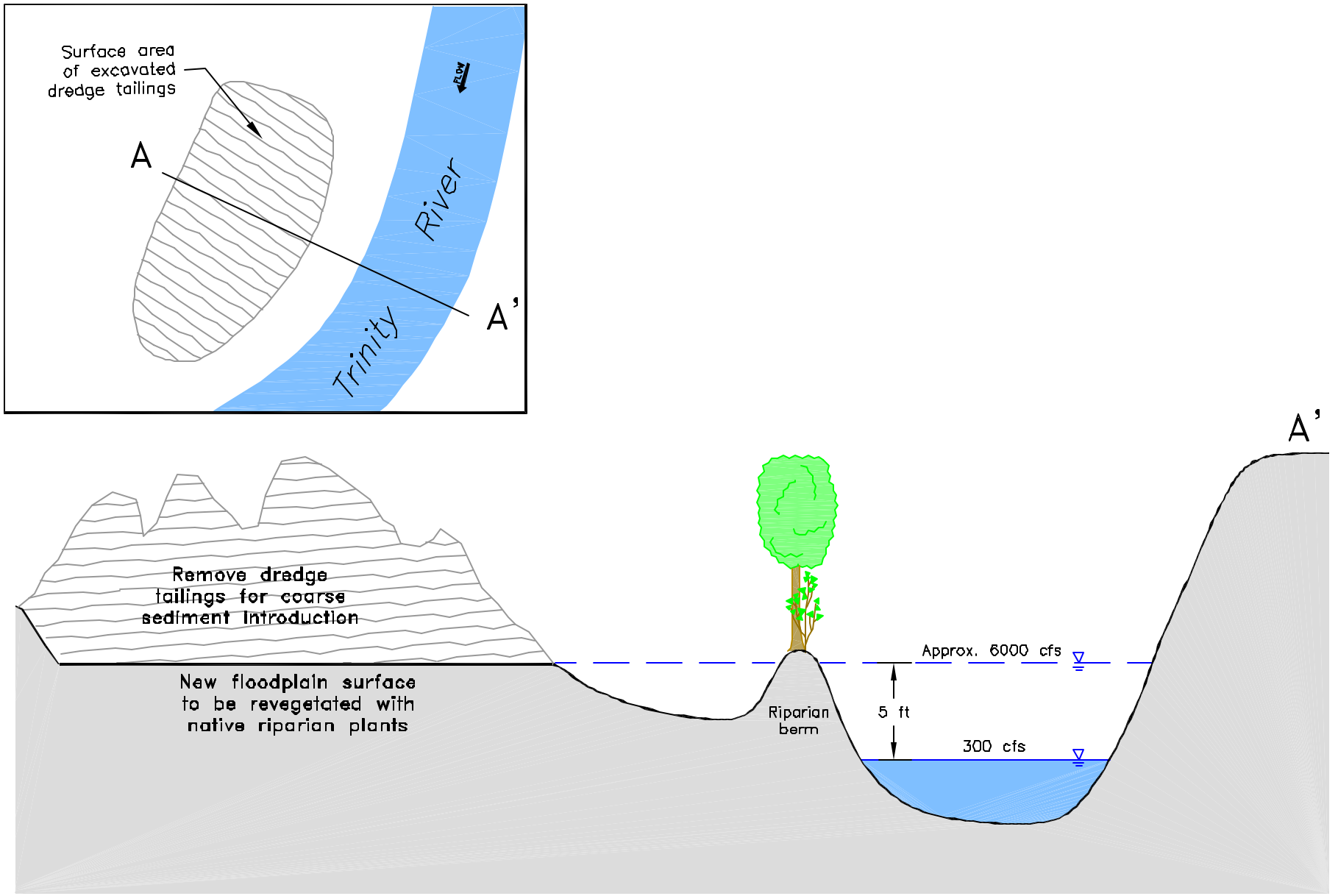

Figure 3. Conceptual cross section showing dredge tailing excavation and floodplain restoration